RAMPLUS

RAMPLUS BOARD INSTALLATION

FOR SEEQUA PORTABLE COMPUTERS
(256 K RAM REQUIRED)

SPN#021700
REV.840901

MS-DOS USER'S NOTE

At the present time, MS-DOS 2.0 interprets memory size over 512 K in the negative range. Some software checks memory size and if it encounters this condition, will inform you that you have TOO LITTLE MEMORY. You can remedy this, by using IBM-DOS 2.1 (which will operate on SEEQUA computers), or by setting your system RAM size to 512 K via the SEEQUA OPTION UTILITY program.

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GENERAL DESCRIPTION

The SEEQUA Chameleon RAMPLUS Board is designed to enhance your Chameleon by providing it with:

- **Increased RAM** - up to a maximum of 640 K. Increased memory reduces the frequency of requests by the system for retrieval of portions of programs for execution, because the system can now retain larger segments in memory, making your computer more efficient. Additionally, you have the capability of running larger application programs.

- **REAL TIME CLOCK** - the Chameleon RAMPLUS comes with a 3 volt Lithium battery which will allow you to set the time and date once. Battery life is one to five years. Once installed, the computer will access the board for time and date - eliminating these data entry steps when you turn your system on.

- **DISK EMULATION** - with increased RAM you have the option of creating a **logical** third disk drive, the **C drive.** This drive uses random access memory instead of recording media, and allows you to designate the amount of Kilobytes you wish allocated, from a minimum of 160 K to a maximum of 360 K. It allows you to manipulate files as if they were on a floppy disk. However, due to the fact that information now resides in RAM instead of on disk, the system speed is greatly increased.

  YOU MUST COPY DATA from the C drive onto floppy disk(s) before turning your system off. Otherwise you will loose all data residing on the C drive.

- **PRINT SPOOLER** - this utility program allows the Chameleon to perform Simultaneous Peripheral Operations On Line. This is similar to having the Chameleon's CPU look over your shoulder for an opportunity to steal small segments of time when you are in the midst of foreground operations (entering commands and/or data); so that printing operations can proceed in the background. Thereby allowing you to continue with various foreground tasks without noticeable interruption.

NOTE: The RAMPLUS board requires 256 K RAM resident on the main logic board and a DOS 2.0 Operating System. For those with only 128 K resident, the SEEQUA 128 K RAM Upgrade Kit, SPN#109100, must be obtained to complete the installation.

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LIST OF PARTS

(1) Installation Manual

(1) RAMPLUS Board w/cables

(1) LS244 IC

(1) BIOS, 2764 CHIP

(1) Mounting Bracket

(1) RAMPLUS Installation Disk

(1) Mounting Hardware Packet

READ ME FIRST

WARNING

TURN OFF THE COMPUTER AND UNPLUG THE POWER BEFORE REMOVING OR INSTALLING ANY COMPONENT

Make sure the unit has been turned off and unplugged for at least 10 minutes before beginning any internal work.

You must be careful when working on, or near the CRT. HIGH VOLTAGE is retained in the rear area of the screen after the power has been turned off. WAIT 10 MINUTES after turning off the power before beginning any examination or repair.

STATIC ELECTRICITY

Your body can collect static electricity by merely walking across a carpeted room. When you touch a metal object or another person, this static buildup is released in the form of a spark or electrical discharge. While this can be a fun game, it can be **DEADLY** to the Integrated Circuits (ICs) on the computer's Printed Circuit Board (PCB), which is also known as the logic board. (The terms PCB and logic board are used interchangeably throughout this manual.)

THEREFORE, it is very important that you discharge any static electricity your body may have stored before venturing into the interior of your Chameleon. This is done by tapping your finger on some part of the chassis, such as the fan grill.

The following example should help drive home the point about the hazards of static electricity.

> Your friend is holding an IC in his hand and is about to install it on the logic board. You walk in, slap him lightly on the shoulder and ask how he's doing. You may or may not have noticed the tiny electrical charge you gave him when you did this. You have just destroyed the internal structure of the IC he was holding (rendering it totally useless), and perhaps your friendship.

REMEMBER:

- Static electricity knows no boundaries.
- Touch the chassis first to discharge yourself.
- NEVER touch anyone who is working with integrated circuits.
- Turn **OFF** the power before removing or installing any component.

Integrated Circuits (ICs) are most often destroyed by a person grounding a static charge on the PCB without thinking.

GETTING READY

A few simple steps should be taken before starting installation procedures:

1. Select a sturdy piece of furniture to work on.
2. Clear off the surface upon which you will place the unit.
3. Make sure that any tools that are to be used inside or near electronic components are **NOT** magnetized.

You will need the following tools:

Phillips Screwdriver IC Remover (optional)

Do not attempt to use an IC Remover for installing chips.

DISMANTLING THE COMPUTER

CABINET REMOVAL

Make sure the unit has been turned off and unplugged for at least 10 minutes before beginning any internal work.

- Place the unit securely on a work bench, or other suitable surface.

- Unplug the power cord and detach it from main unit.

- Detach the keyboard from main unit.

- Be sure the rear panel door is closed and place the unit in its upright carrying position with the handle on top.

- Unscrew the following Phillips screws:

  Two (2) from the top of unit

  Two (2) from the sides of unit (1 on each side)

  Eight (8) from the bottom of unit

- Carefully remove the unit housing by **slowly** pulling up on the carrying handle. Take care to avoid damaging the exposed chassis components. The logic board is positioned on the top of the chassis. Special care should be given to this area as the cabinet is being removed.

Now, place your Chameleon in its normal horizontal position with the logic board facing upward.

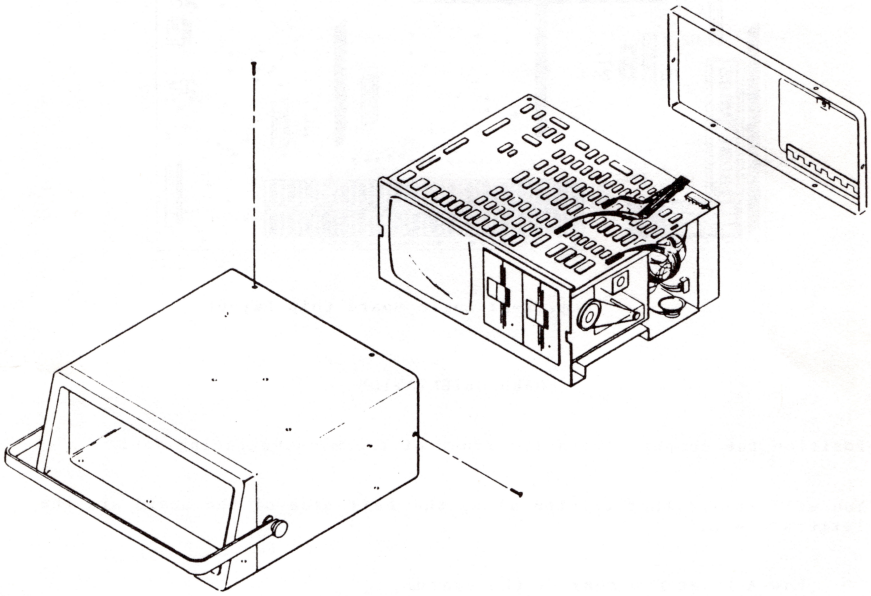

Fig. 2-1: Chameleon Cabinet Removal

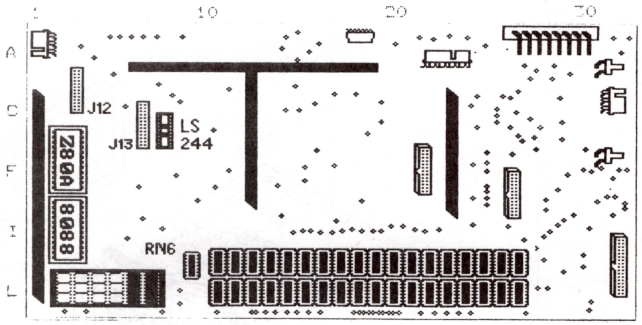

Fig. 2-2: Logic Board Chip Layout

BOARD ORIENTATION

Position the computer with the front of the machine facing you.

You will notice that printed along the **left** side of the board are the letters **A - L.**

Row **A** is at the **rear** of the board.

Row **L** is at the **front** of the board.

Across the TOP of the board (from left to right),are the numbers **1 - 33.**

These letters and numbers serve as coordinates, to assist you in finding the location(s) where you will perform various operations. Coordinates will be presented in the following format: <K10> (where K represents the row and 10 represents the column location).

UPGRADING THE MAIN LOGIC BOARD TO 256 K OF RAM

NOTE: The logic board must first be populated with 256 K before the expansion board can be used. For those with only 128 K resident, the SEEQUA 128 K RAM Upgrade Kit, SPN#109100, must be obtained to complete the installation.

If your Chameleon already has 256 K of RAM and a 180~ohm resistor pack, you may skip to **Installing the LS244 IC.**

This modification adds an additional 128 K of memory to the Chameleon. Thereby increasing the total on~board memory to 256 Kilobytes. This is accomplished by installing 18 additional RAM chips (in positions <L10 ~ L36>), one 180~ohm resistor pack and a LS 244IC.

A FEW WORDS OF CAUTION CONCERNING RAM CHIPS

Before attempting to place a chip into its socket on the logic board, there a few important rules you should be aware of:

1. **Do not** attempt to put a chip in with an IC remover! It is the **wrong** tool for installing chips.

2. CHIP ORIENTATION ~ every chip should have a notch at one end. Take a look for yourself. The notch is there to help you locate pin #1. If you didn't know about the notch and that the prongs going into the socket can only go one way, you might put the chip in backwards. That may sound funny, but you won't be laughing when you're chip blows.

   a. On the logic board, every **vertical** IC is oriented so that the notch is facing the **rear** of the PCB.

   b. All **horizontal** ICs have their notch facing the **right** of the PCB.

   The board's RAM housing strip will have a small 1 at the location of pin #1.

Fig. 3~1: PIN DIAGRAM

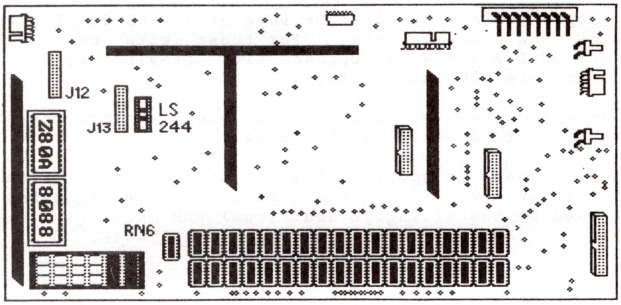

Fig. 3-2: LS244 IC INSTALLATION

3. OFFSETTING CHIPS - care should be taken to make sure all the pins go into the correct socket holes and that you **do not** offset the chip in either direction. The results of such an error can be as disastrous as putting the IC in backwards.

   A chip should go into place using smooth, steady pressure. If you have to force it in, something's definitely wrong and the pins/legs can be seriously damaged.

4. BENT PINS - can frequently be realigned by placing the chip on its side and applying **light** pressure. Be gentle, the pins/legs are quite fragile.

Now that you are aware of what you should **not** do, follow these simple, **critically worded** steps.

1. Locate the notch on the chip.

2. Tilt the chip to line up the pins on one side (left or right, **not** top or bottom) with their socket hole counterparts.

3. Use only enough pressure to bend this row of prongs while pushing downward slightly so that the other row of prongs will slip into their socket holes without bending their pins under.

4. Once both rows of prongs are seated correctly, press down firmly to make sure the chip is secure.

NOTE: The logic board may bend slightly under pressure but there is no cause for alarm. It is designed to be flexible. **However,** if it is bent too far or too hard, the traces on the PCB will tear.

INSTALLING RAM CHIPS

The first step in this upgrade is to locate and fill the empty row of RAM sockets with the 18 RAM chips provided in the upgrade kit. With the logic board exposed, locate row L, column 11. Starting at this location <L11> and continuing to the right in row L are eighteen (18) empty sockets labeled 10 through 18, and then 28 through 36. Place the RAM chips with the notch facing the **rear** of the PCB. Upon completion, Row L should look identical to the 18 RAM chips located in Row K.

NOTE: Please refer to Fig. 2-2 for Logic Board Chip Layout.

INSTALLING THE RESISTOR PACK

You must replace the existing 330-ohm resistor pack. This pack is located to the **left** and adjacent to the top row of RAM . It has a silkscreen designator of **RN6** <K10>. The pack should be labeled with a number, part of which should read **C33.** Remove this resistor pack and insert the new 180-ohm pack. The 180-ohm pack should be imprinted with a number that contains **C18** in it. It will be identical to the resistor pack in row L just below RN6, marked RN7.

At this point you should note the position of the J-12 header. It is located at <C2> on the board. The J-13 header is located at <D7> on the board. These headers will be used to connect the data ribbon cables from the RAMPLUS Board.

INSTALLING THE LS244 IC

An LS244 IC **must** be placed in the open socket next to the J-13 header <E8-9> to insure proper clock installation and functioning. It is imperative that you follow the correct IC installation procedures and cautions outlined in the first part of this section.

NOTE: In order for the RAMPLUS On Board Clock to function properly, a check of the logic board should be made to insure that pin 20 of the LS244 block <E9> be jumpered on the rear of the logic board to pin 20 of the LS245 soldered chip <E6>. This visual check is possible (without removing the logic board), from the CRT side of the chassis. If the jumper is not present, the logic board must be removed to jumper the connection. The majority of boards should have this jumper already installed.

INSTALLING THE BIOS, 2764 CHIP

The last chip installation procedure is the replacement of the BIOS, 2764 Chip. In the bottom left corner of the logic board <L1-9> you will see a six block chip section with four empty slots and two large chips. Beneath this section, the six blocks are labeled A B C D E F. Carefully remove the chip at <L8> labeled F and replace it with the 2764 chip supplied in this kit.

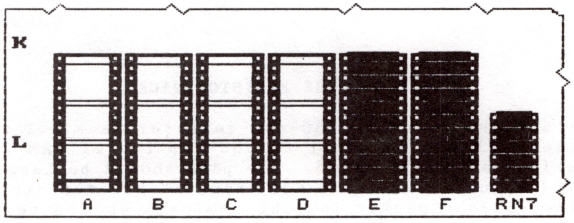

Fig. 3-3: BIOS, 2764 INSTALLATION

INSTALLING THE CHAMELEON RAMPLUS BOARD

DO NOT TOUCH THE CRT!

High voltage is retained by the rear of the screen, even after the power has been turned off.

NOTE: Before starting installation, check the art work on the card and LABEL the free end of the ribbon cable with a felt tipped marker or ball point pen to correspond with its designated connector. The connectors tend to partially cover the art work. However, J-13 is located on the outer edge of the card and J-12 is the innermost connector. This will insure that the proper ribbon cable connections will be made when the time comes for attaching it to the PCB.

The RAMPLUS Board has two data ribbon cables and a power cable attached. The power cable consists of two wires (RED = +5 volts, BROWN = ground) and 1 MALE and 1 FEMALE connector.

1. REMOVING THE DISK DRIVE SCREWS

   a. Position the computer with the disk drive shield upward, and the bottom of the computer facing you.

   b. Remove the four drive mounting screws (with their flat and split washers) located on the BOTTOM of the computer beneath the drive(s).

2. MOUNTING THE BRACKET

   a. Position the RAMPLUS Mounting Bracket with the mounting posts facing outward - toward you. The mounting screw holes should be closest to the front of the computer (your left during installation).

   b. Now replace the 4 Phillips screws you removed from the drive(s). The screws must go through the split washer, the flat washer, the mounting bracket, chassis, disk drive shield and into the screw holes on the bottom of the disk drives.

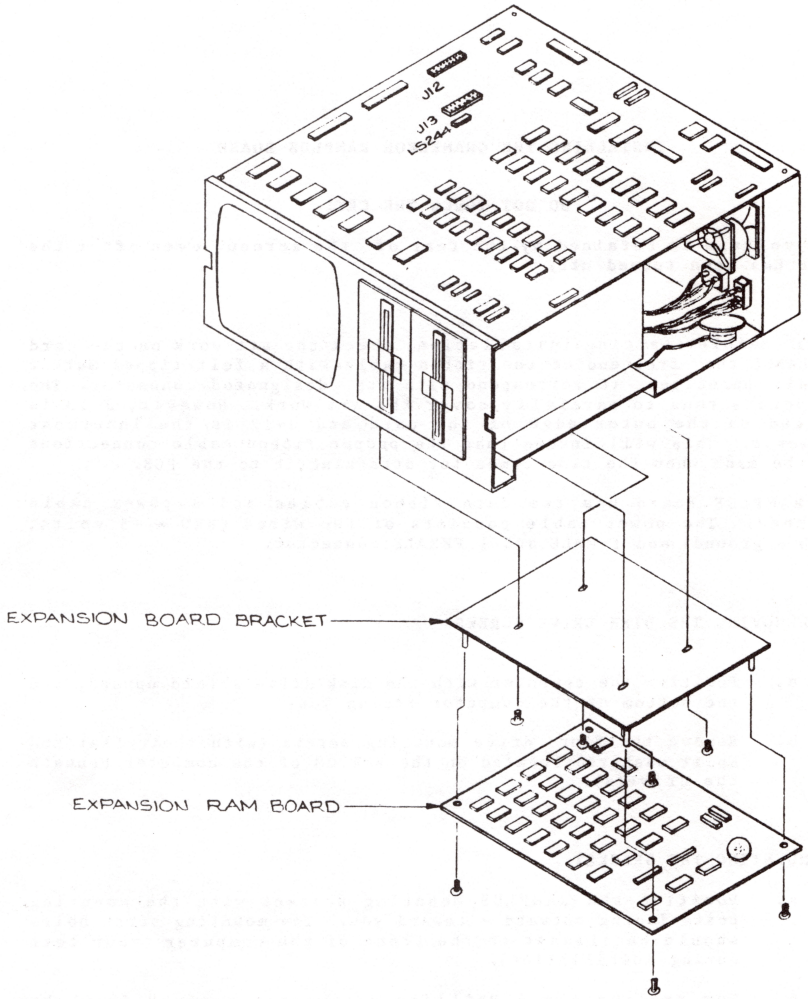

Fig. 4-1: Positioning the RAMPLUS Expansion Board

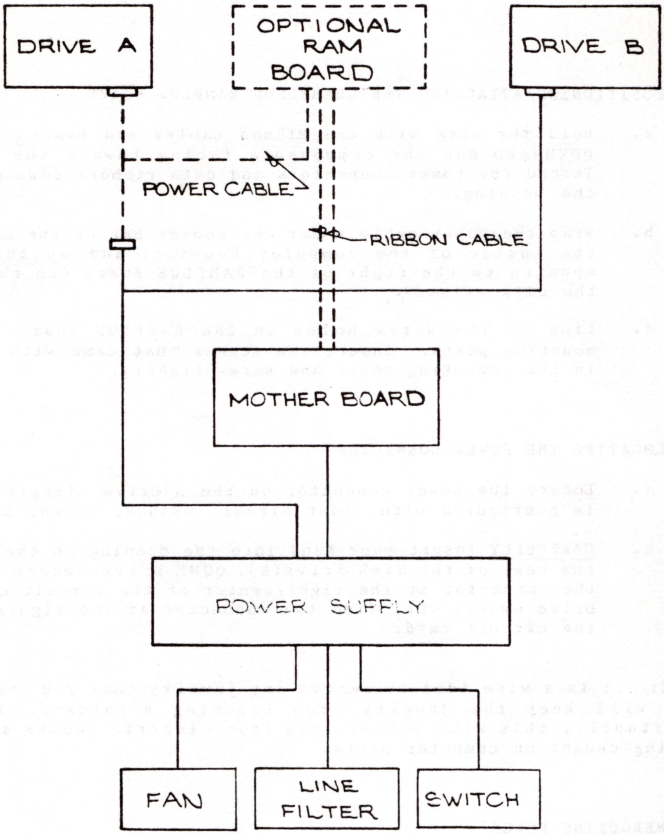

Fig. 4-2: Installation Flowchart

3. POSITIONING/ATTACHING THE CHAMELEON RAMPLUS BOARD

a. Hold the card with the Ribbon Cables and Power Connectors DOWNWARD and the components facing toward the computer. Thread the power connectors and data ribbons down and behind the housing.

b. Wrap the power cable under the center bar of the chassis (on the inside of the computer housing) and up through the opening to the right of the RAMPLUS Board (to the rear of the disk drives).

c. Line up the screw holes on the RAMPLUS Board with the mounting posts. Insert the screws that came with the board in the mounting posts and screw tightly.

4. LOCATING THE POWER CONNECTOR

a. Locate the power connector on the A Drive circuit card. It is configured with four wires: ORANGE, BROWN, BROWN, RED.

b. CAREFULLY insert your hand into the opening on the right, at the rear of the disk drive(s). QUME Drive owners will find the connector at the right/center of the circuit card; MPI Drive owners will find the connector at the right/bottom of the circuit card.

NOTE: It is a wise idea to remove any jewelry that you are wearing. This will keep the jewelry from becoming scratched. BUT more importantly, this will protect you from electric shocks as well as getting caught on computer parts.

5. REROUTING POWER

We are going to reroute the power to the RAMPLUS Board and then out to the disk drive. To accomplish this:

a. Disconnect the Female Disk Drive Power Socket and connect it to the MALE plug on the RAMPLUS Board power cable.

b. Attach the FEMALE connector from the power cable on the RAMPLUS Board to the MALE power input plug on the disk drive. This plug is polarized to fit in only one direction.

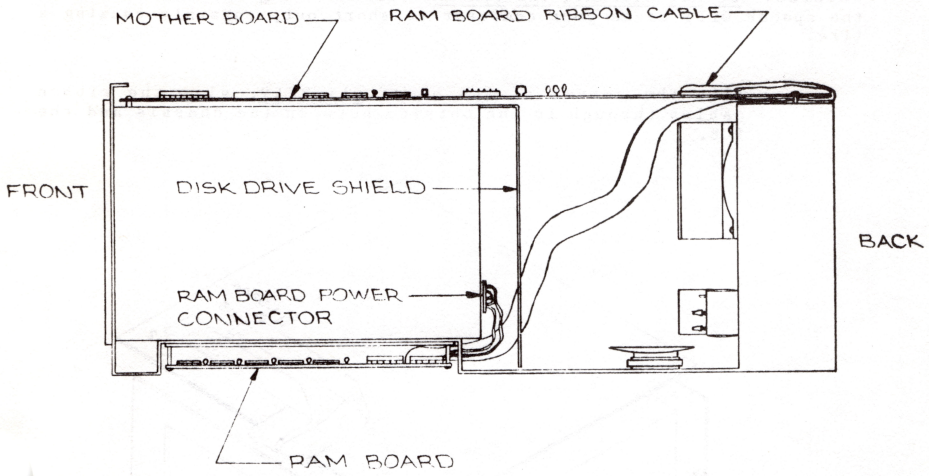

Fig. 4-3: Ribbon Cable Wrapping

6. WRAPPING OF DATA RIBBON CABLES

a. A brief word on ribbon cables - when attempting to position the cable in the desired direction, always try to make right angle folds. Remember, it is very easy to crimp a few wires in a ribbon assembly when the cable is 'squeezed' or 'twisted'.

b. **Carefully** feed data ribbon cables into chassis between the CRT Board and the Power Supply Board.

c. **Reposition** the computer horizontally so that the fan and rear panel are facing you.

d. Remove the screw and **spacer** from the corner of the PCB, adjacent to <A1>. Newer computers do NOT have spacers.

WARNING: DO NOT MISPLACE the SPACER! Reconnecting the board without the spacer will cause your computer to short out, possibly causing a fire.

e. Lift the corner of the board slightly; slip the ribbon cables through to the outside between the chassis and the PCB.

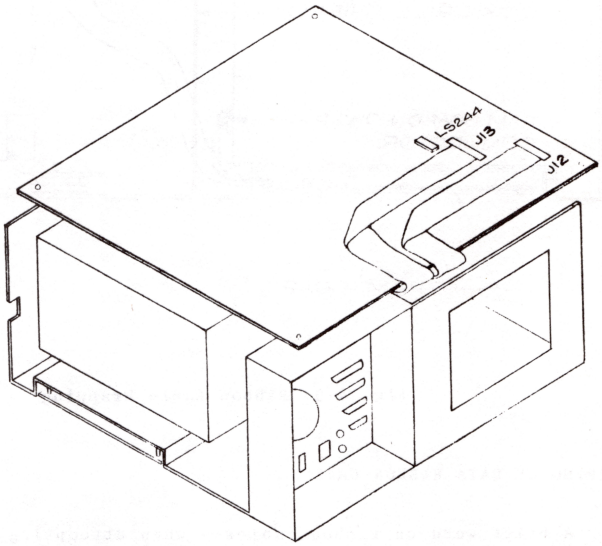

Fig. 4-4: PCB Data Ribbon Connections

7. CONNECTING THE DATA RIBBON CABLES TO THE PCB

a. Check your markings on the cables.

b. Attach the cables to the appropriate header on the PCB. The J-12 header is located at <C2> on the board, it is the outer 32-pin header. The J-13 header is located at <D7> on the board, it is the interior 32 pin header. Make sure the ribbon marked **J12** gets attached to the J-12 header and the **J13** cable attaches to the J-13 header.

c. Make sure the Red or Blue Index Stripe on the cables is facing toward the **FRONT** of the computer (toward the CRT screen).

WARNING: If ribbon cables/connectors are not correctly oriented, the computer will not operate.

8. TESTING THE SYSTEM

a. **Before testing your computer,** check that you have removed all tools and metal objects from under the computer, or in close proximity.

b. Connect the power cord to the computer, and then your electrical source.

c. Insert your DOS Disk in Drive A.

d. Turn on your computer.

e. If you have performed all installations correctly, your screen will present you with its normal display, after booting.

If your screen is blank, check to see that all installations have been performed correctly and that there are no loose wires.

REASSEMBLY

NOTE: The following checks should be performed every time the cabinet is removed and before it is reassembled. Make sure that:

1. Disk Drive units are securely fastened inside the metal shield housing;
2. Molex power connectors in rear of units have been reconnected;
3. Both units are flush with face of chassis;
4. Ribbon cable(s) are attached to connect drive(s) to logic board;
5. Metal shield housing has rubber bumpers on top to prevent shorts to the board.

CABINET HOUSING

When replacing the cabinet on the chassis, make sure you do it slowly, giving great care and attention to the exposed components of the logic board; then:

1. Place housing in its normal horizontal position with the handle out from under;
2. Slide the chassis into its housing, paying attention NOT to snag the new ribbon cables. You can fold them and press them down toward the board during reassembly. **If chassis hangs up** when it is almost in, hold a small piece of cardboard between the ROMs and cabinet until you get past the point where it catches;
3. Snugly fit the main housing to rear cabinet panel;
4. Insert all twelve (12) Phillips head screws;
5. Tighten all screws.

NEVER turn the unit upside-down to insert screws. This places all the weight on the PC board creating the risk of severe damage.

RECONFIGURING THE CHAMELEON WITH THE SEEQUA OPTION PROGRAM

Although you have just made physical changes to your Chameleon, it does not know that you have increased its memory capacity. To do so, you must reconfigure the on-board EEPROM. SEEQUA recommends that reconfiguration be performed using its OPTION UTILITY PROGRAM. This program modifies registers in non-volatile RAM making the changes semi-permanent.

MS-DOS USER'S NOTE

At the present time, MS-DOS 2.0 interprets memory size over 512 K in the negative range. Some software checks memory size and if it encounters this condition, will inform you that you have TOO LITTLE MEMORY. You can remedy this by using IBM-DOS 2.1 (which will operate on SEEQUA computers), or setting your system RAM size to 512 K via the SEEQUA OPTION Utility Program.

THE OPTION UTILITY PROGRAM

The OPTION Utility Program resides on the SEEQUA MS-DOS 2.0 System Disk. Place this DOS disk in Drive A and:

1. Boot the system by turning on the power or pressing the ALT, CTRL and DEL keys simultaneously.

2. After answering the prompts for date and time, type the word "option" after the A: prompt and press the Enter key.

You will then be presented with the **OPTION MENU** which will display a listing of all available options on the Chameleon. However, only those options required for installation of the RAMPLUS will be discussed and shown. Please see your SEEQUA Owner's Reference Guide, OPTION Section for a detailed explanation of this utility.

```
------Hardware configuration------
|  A = Set system RAM size         |
|  B = Set # of disk drives        |
|  C = Set auto boot mode          |
|  D = Set PC/XT compatible mode   |
|  E = Set keyboard volume         |
|  F = Set 8087                    |
-----------------------------------
      R = Reset all options
      S = Status
      X = Exit
```

Fig. 6-1: OPTION MENU - Hardware Configuration

1. Select A (Set system RAM size) which will allow you to alter the memory size. The program will display the present RAM size and and offer you TEN alternatives.

2. Press letter representing the amount of RAM your Chameleon now has. If your computer now has 640 K of RAM press J.

NOTE: Your selection will be displayed at the top of the MENU Screen, not at the bottom.

3. This is the only change needed. Press ESCape to return to the OPTION MENU.

4. Now you must:

   Select **X = Exit Option Program**

   Choose **Y = Save new options and reboot** to start the rewrite of the non-volatile RAM (where all the function parameters are permanently held until altered again).

   OR

   Choose **N = Retain old options and exit** to disregard any changes you made during this session and exit to the operating system.

SOFTWARE INSTALLATION

SYSTEM STARTUP

Thus far, you have installed the Chameleon RAMPLUS Board and reconfigured the computer's hardware options, informing it of its increased RAM and firmware capacity using the SEEQUA Option Utility Program. You must now provide the computer with the means to access (read) the Real Time Clock on the RAMPLUS Board for TIME and DATE and write this data to the screen for your approval or modification.

In order for you to accomplish this, you must have an understanding of the internal processes the computer goes through when it is booted and the internal and external commands and files it searches for. A more detailed explanation is provided in the MS-DOS section of your Chameleon Owner's Reference Guide.

THE BOOTING PROCESS

1. When you turn your computer on, it knows to go to the first two tracks of your disk. These tracks contain your operating system and 2 hidden files. IBM files are named IBMBIO.COM (for hardware interface) and IBMDOS.COM (for the disk operating system. MS-DOS files are named MSDOS.SYS (for the operating system) and IO.SYS (for hardware interface).

2. It searches for the COMMAND.COM file. This file serves as an interface between your input (user input) and lower levels of the operating system.

3. Once COMMAND.COM is loaded into memory, the system knows that part of its job is to ask: What needs to be done next? It will then search for a CONFIG.SYS file, if it exists.

4. The CONFIG.SYS file holds the system configuration. It has the ability to inform the system of the number of BUFFERs to be installed (each buffer increases the resident size of DOS by 528 bytes), which DEVICEs the system will recognize, and the top processor to be loaded in (SHELL). These install statements reference the file which holds the configuration for a specific device.

The CONFIG.SYS file performs these operations by allowing you to establish the appropriate number of buffers for maximum efficiency. A buffer is used to increase the area of memory where program data is stored. A buffer contains the equivalent of one, 128 Kilobyte record. This reduces the frequency of requests by the system for retrieval of disk data, because the system can now retain more segments in memory. While it is possible for you to configure your system with a minimum of one to a maximum of 99 buffers; it is suggested that you select a buffer size between 10 and 15 for maximum operating efficiency.

After establishing the number of buffers, you list the DEVICE(s) to be accessed. An important point to remember is that while a device can be a tangible piece of hardware, it can also be a file. The ANSI.SYS file is a standard file designed to serve as an IO interface. This file is used to input generic computer information and convert it to computer specific output, and only needs to be set up once.

5. Upon loading and execution of CONFIG.SYS, the system will then ask: What's next? And look for the AUTOEXEC.BAT.

6. The AUTOEXEC.BAT file is a batch file that allows you to customize your system by storing commands that will automatically be executed each time you start your system.

Now that you understand the booting process, you should be ready to install the Real Time Clock, edit the CONFIG.SYS file, if you wish to modify or delete any of the installation parameters provided with RAMPLUS. Additionally, there will be a discussion of customizing the AUTOEXEC.BAT for those owners using the disk emulator to create a 3rd logical drive, known as the **C drive.**

The FIRST step before going any further is to make a BACKUP copy of the Utility Disk provided with the RAMPLUS,

EXAMINING The SEEQUA UTILITY DISK

At this point you should load the SEEQUA Utility Disk that was provided with your RAMPLUS Board in the A drive. Execute a DIR command. You will see a listing of .SYS files. Type the following command so that you can view the CONFIG.SYS file:

A>type config.sys <CR>

NOTE: <CR> stands for carriage return/ENTER key.

The monitor should now display a file that looks similar to the following:

```
BUFFERS=12
DEVICE=ANSI.SYS
DEVICE=CLK.SYS
DEVICE=DISK160.SYS
```

BUFFERS=12 and DEVICE=ANSI.SYS were explained earlier.

DEVICE=CLK.SYS is the program used to install your Real Time Clock. It tells the computer where and how to establish ports which the computer will use to read the time. The computer checks the port which accesses the RAMPLUS Board for the date/time and sends this data to another port for display on the terminal screen.

DEVICE=DISK160.SYS is the program used to install a third logical disk drive, known as a disk drive emulator. You have the option of specifying the memory capacity of this drive. However, you must first determine the amount of memory you will need based upon the amount of RAM your computer now has and the size of the files (software and data) that you plan to work with on this drive.

NOTE: The RAMPLUS Board provides you with the OPTION of using the Real Time Clock and disk emulator. If you prefer not to utilize these options, simply delete these statements from the CONFIG.SYS file using one of the methods described in the later in this section.

CREATING A WORKING DISK FOR DEVICE INSTALLATION

You have made a backup copy of the RAMPLUS Utility Disk. The next step is to make a bootable working disk. Take a properly formatted disk with your operating system installed on it and copy **only** those manner you wish.

REQUIRED FILES FOR CLOCK INSTALLATION

You will need to copy the following files from the RAMPLUS Utility disk for clock installation:

CONFIG.SYS
ANSI.SYS
CLK.SYS

DISK DRIVE EMULATION

If you wish to install a disk emulator, it is important that at least 128 K of RAM be set aside for use by your application programs, since they do not reside on the emulated drive. It is also important that you **do not** try to install more RAM than you have on your RAMPLUS Board. Your selection of the correct DISK.SYS file should be based on these considerations. It is prudent to select the next lowest DISK.SYS file for inclusion in your installation statement. The files required for drive emulation are: CONFIG.SYS, ANSI.SYS, and DISK###.SYS.

Substitute the amount of Kilobytes you want dedicated to your C drive where the # symbol appears. **Remember**, the amount you indicate **must** correspond with one of the DISK.SYS options: DISK160.SYS (160 K), DISK180.SYS (180 K), DISK320.SYS (320 K) and DISK360.SYS (360 K).

NOTE: If you have already installed BOTH the Real Time Clock and the disk emulator, there is no need to copy the CONFIG.SYS and ANSI.SYS files again.

EDITING THE CONFIG.SYS FILE

There are two ways of modifying the CONFIG.SYS file.

1. Call up your word processing system, Perfect Writer or Word Star. If you are using Word Star open the CONFIG.SYS file in the non-document mode.

   a. Delete any unwanted device installation.

   b. If you are changing the amount of memory for disk drive emulation, enter the appropriate disk.sys file parameter.

2. If you wish, you may edit your file using EDLIN provided it is resident on your disk. The command is:

A>edlin config.sys <CR>

AUTOEXEC.BAT CUSTOMIZATION FOR DISK EMULATION

The purpose of an AUTOEXEC.BAT is to automatically execute batch (direct) commands. You can use an AUTOEXEC.BAT to immediately load those programs you use most frequently into memory upon booting. For example, if most of your work involves the use of Word Star you can create an AUTOEXEC.BAT that will automatically install Word Star on your C Drive. On the other hand, if your heavy into system management - you may want SEEQUA's EXEC program loaded to the C drive. Basically, the AUTOEXEC is a time saver, allowing you to determine which program(s) you want executed - in advance; thus saving you the time and trouble of going through the manual operations of copying those files to your C-drive.

An AUTOEXEC.BAT has been provided on the Utility Disk accompanying your RAMPLUS Board. You have the option of modifying it or creating a new one. The following example, will provide you with a format for creating an AUTOEXEC.BAT or modifying one. If you plan to experiment, it is wise to rename the AUTOEXEC.BAT provided with the RAMPLUS Board, and note the name in a safe place. This will give you with a margin of safety in the event of error. Name your new or modified file, AUTOEXEC.BAT.

We will now create an AUTOEXEC.BAT to install Word Star Programs on the C drive. You can use EDLIN, Word Star (Non-document mode), or Perfect Writer to create your AUTOEXEC.BAT.

COMMAND	Meaning
CLS	Clear Screen
c:	drive specified for installation of the following files.
echo Please Wait	display this message on the screen

```
echo Installing Word Star on C drive
copy A:ws*.*
echo Installation Complete
DATE
TIME
```

NOTE: It is not necessary for you to place extra lines between your command lines. This was done to make it easier for you to read.

Remember you **MUST COPY** all data that you have created or modified from the C drive onto floppy disk(s) **before** turning your system off. Otherwise you will **loose** all data residing on the C drive. It is for this reason, that you instructed the AUTOEXEC.BAT to **copy** your Word Star command and overlay files to the C drive.

PERFORMING PRINTING OPERATIONS

SPOOLING

SPOOLING stands for Simultaneous Peripheral Operations On Line. This means that you can have printing operations performed in the background while you continue with foreground operations (entering commands and/or data). This is accomplished by the CPU monitoring your foreground activities. Because the computer is exceedingly efficient it can "steal" the time between your key strokes and other activities to run the printer.

The **PRINT** Command with the parameters discussed later in this section will allow you to:

- List (**queue**) up to 10 files to be printed while you continue with other tasks on the computer.
- Identify the printing device you wish to print on. However, it MUST be connected to your computer.
- Display the files queued to print.
- Allow you to selectively cancel the printing of file(s).
- Globally terminate print operations.
- Selectively add file(s) to the print queue.

NOTE

PRINT.COM is a useful utility for printing files. **However**, certain word processing programs, i.e., WORDSTAR, use extraneous control characters to format their files. This format is **not** compatible with DOS text files.

To assist you in converting non-DOS text files, SEEQUA has provided you with the **DOSCOPY** utility which resides on your SEEQUA Utility Disk.

Should youaccidentallyqueue a non-DOS file to print, reset your printer, by turning it off and then on again, before issuing another print statement.

THE SEEQUA SPOOLER

The SEEQUA Spooler differs from the IBM Spooler in the following ways:

- The SEEQUA Spooler's buffer is 2 K, which is four times larger than IBM's spooler.

- The SEEQUA Spooler will operate even while you are not in a keyboard-wait state i.e., BASIC; IBM's spooler will not.

INSTALLING THE SEEQUA SPOOLER

To install the SEEQUA SPOOLER simply type the following command into your AUTOEXEC.BAT, **after** the path command (path=a:\):

PRINT<PRINT.INP

The .INP file contains the default printer device, to change devices, simply call up this file and change the default. The following is a listing of device names:

LPT1 or PRN (first parallel port) LPT2 (second parallel port)
COM1 or AUX (first serial port) COM2 (2nd serial port)

PRN represents the current default in the .INP file, and will be selected if you press <CR>.

NOTE: the ENTER key is represented by the symbol <CR>.

SOME IMPORTANT POINTS ABOUT THE SEEQUA PRINT COMMAND

1. The first time this command is issued (PRINT), it increases DOS' resident size by 4800 bytes.

2. You can enter more than one filename on the command line. Use of global and wildcard characters are permitted.

3. Once the PRINT command has been issued, you may change directories without affecting the printing of files resident in the print queue. **However,** no paths are allowed, but you can specify a different disk.

4. Entering **PRINT <CR>** (no parameters) will generate a list of the files currently in the queue.

5. Files are queued for printing in the order they are entered. After a file is printed, the paper advances to the next new page.

6. IF PRINT encounters a disk error when reading the file to be printed, it will:

   a. Cancel the file currently being printed.

   b. Cause a disk error message to be printed on the printer, advance the paper to the next page and sound the printer bell.

   c. However, the remaining files in the queue will be printed unless another disk error is encountered causing the above procedure to be repeated.

NOTE

The disk containing the files that are queued for printing MUST remain in the specified drive until ALL printing is completed. Those files that are queued for printing MUST NOT BE ALTERED or ERASED until it has been printed. You may designate any drive as your default drive.

USING THE PRINT COMMAND

Parameters Used With The Print Command

/T **TERMINATE:** use of this parameter will delete ALL files waiting to be printed from the print queue. If a file is in the process of being printed, printing operations will stop after the data being held in the printer's buffer has finished printing. Then, a cancellation message will be printed, the paper will advance to the next page and the printer alarm will sound.

/C **CANCEL:** use of this parameter allows you to selectively cancel printing of file(s). The filename preceding this parameter and any following it on the command line, will be deleted from the print queue until a /P is encountered or <CR> is pressed. Use of this parameter will cause the printer alarm to sound, and a cancellation message to be printed listing the names of the files cancelled. Paper will be advanced to the next page and those files remaining in the queue will continue to be printed.

/P **PRINT:** use of this parameter instructs the system to print the preceding filename and any following it, until a /C is found on the command line or <CR> is pressed.

NOTE: If no / parameters are specified, the /P is assumed. Those files listed on the command line will be queued for printing when <CR> is pressed. /P is used in conjunction with other parameters to set the print mode.

EXAMPLES OF PRINT COMMANDS

1. To queue a file to the printer, type:

   A>print d:filename.ext <CR>

NOTE: d: represents the drive specifier, if required.

2. To queue more than one file to the printer, type:

   A>print d:filename.ext d:filename.ext d:filename.ext

3. To list the files in the print queue, type:

   A>print <CR>

4. To empty the print queue and cease all printing operations, type:

   A>print/t <CR>

5. To remove all ABCD.* files from the print queue that have the same drive specifier as the default drive, type:

```
A>print abcd.*/C <CR>
```

6. To remove (cancel) files a:ABC1 a:DEF2 and a:GHI8 from the print queue, type:

```
A>print a:abc1/c a:def2 a:ghi8 <CR>
```

7. To remove (cancel) files a:DEF2 and a:GHI8 from the print queue and ADD files a:PLAY.TXT and a:READ.ME to the queue, type:

```
A>print a:def2/c a:ghi8 a:play.txt/p a:read.me <CR>
```

or

```
A>print a:play.txt/p a:read.me a:def2/c a:ghi8 <CR>
```

The only difference between these two command lines is the order in which the commands will be performed.